



Water-Data Report 2008

01377000 HACKENSACK RIVER AT RIVERVALE, NJ

HACKENSACK RIVER BASIN

LOCATION.--Lat 40°59'57", long 73°59'21" referenced to North American Datum of 1983, River Vale Township, Bergen County, NJ, Hydrologic Unit 02030103, on upstream right bank at bridge on Westwood Avenue in Rivervale, 1.5 mi upstream from Pascack Brook, 4.1 mi downstream of Lake Tappan, and 4.6 mi upstream from Oradell Dam.

DRAINAGE AREA.--58.0 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WDR NJ-80-1: 1968-79(M).

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 22.51 ft above NGVD of 1929.

REMARKS.--Records fair. Flow regulated by DeForest Lake (since 1956, see 01376700) and Lake Tappan (since 1965, see 01376950). Diversions from DeForest Lake (see 01376699) and West Nyack, NY (see 01376810), for municipal water supply. Several measurements of water temperature were made during the year. Satellite gage-height telemetry at station.

Water-Data Report 2008

01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

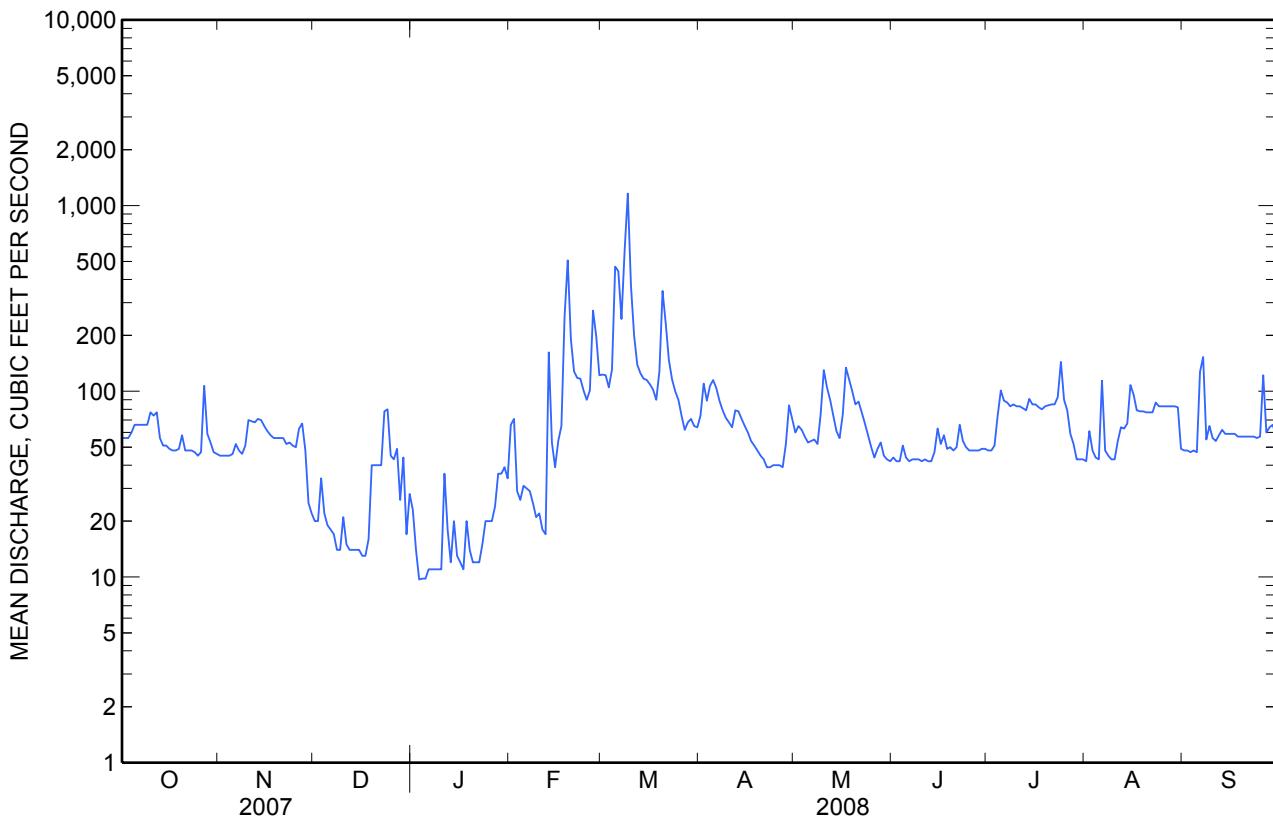
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	56	45	20	23	66	123	74	60	44	48	42	48
2	56	45	20	14	71	122	110	65	42	48	61	48
3	56	45	34	9.7	29	105	89	62	42	51	48	47
4	60	45	22	9.8	26	131	107	57	51	74	44	48
5	66	46	19	9.8	31	469	115	53	44	101	43	47
6	66	52	18	11	30	443	104	54	42	89	114	127
7	66	48	17	11	29	245	89	55	43	87	48	153
8	66	46	14	11	25	575	79	52	43	83	45	55
9	66	51	14	11	21	1,160	72	75	43	85	43	65
10	77	70	21	11	22	371	68	130	42	83	43	56
11	74	69	15	36	18	199	64	105	43	83	54	54
12	77	68	14	18	17	139	79	90	42	81	64	58
13	56	71	14	12	162	125	78	74	42	79	63	62
14	51	70	14	20	53	117	71	61	47	91	67	59
15	51	65	14	13	39	115	65	56	63	85	108	59
16	49	61	13	12	54	109	60	75	52	85	96	59
17	48	58	13	11	65	102	54	134	58	82	79	59
18	48	56	16	20	253	90	51	116	49	80	78	57
19	49	56	40	14	507	128	48	100	50	83	78	57
20	58	56	40	12	190	347	45	85	48	84	77	57
21	48	56	40	12	128	232	43	88	50	85	77	57
22	48	52	40	12	118	147	39	77	66	85	77	57
23	48	53	78	15	117	116	39	67	54	93	87	57
24	47	51	80	20	101	100	40	58	50	144	83	56
25	45	50	45	20	90	90	40	50	48	90	83	57
26	47	63	43	20	101	74	40	44	48	79	83	122
27	107	67	49	24	272	62	39	49	48	59	83	60
28	59	48	26	36	199	68	52	53	48	52	83	64
29	53	25	44	36	122	71	84	45	49	43	83	66
30	47	22	17	39	---	65	71	43	49	43	82	58
31	46	---	28	34	---	64	---	42	---	43	49	---
Total	1,791	1,610	882	557.3	2,956	6,304	2,009	2,175	1,440	2,398	2,165	1,929
Mean	57.8	53.7	28.5	18.0	102	203	67.0	70.2	48.0	77.4	69.8	64.3
Max	107	71	80	39	507	1,160	115	134	66	144	114	153
Min	45	22	13	9.7	17	62	39	42	42	43	42	47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	58.8	69.2	80.2	89.0	88.5	132	138	96.2	77.8	77.8	70.9	68.8
Max	312	240	248	251	221	379	438	310	319	339	197	325
(WY)	(1956)	(1956)	(1997)	(1949)	(1951)	(1953)	(1983)	(1989)	(1972)	(1945)	(1955)	(2004)
Min	12.1	16.6	12.6	18.0	19.9	11.2	14.5	20.4	13.4	11.6	11.4	7.87
(WY)	(1942)	(1996)	(1981)	(2008)	(2002)	(1981)	(1981)	(1981)	(1957)	(1954)	(1944)	(1953)

01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued**SUMMARY STATISTICS**

	Calendar Year 2007	Water Year 2008			Water Years 1942 - 2008	
Annual total	36,164		26,216.3			
Annual mean	99.1		71.6		87.2	
Highest annual mean					156	1952
Lowest annual mean					30.9	1981
Highest daily mean	4,380	Apr 16	1,160	Mar 9	4,380	Apr 16, 2007
Lowest daily mean	13	Dec 16	9.7	Jan 3	4.4	Oct 10, 1995
Annual seven-day minimum	14	Dec 11	10	Jan 3	5.0	Oct 7, 1995
Maximum peak flow			1,390	Mar 9	4,620	Apr 16, 2007
Maximum peak stage			5.21	Mar 9	12.19	Apr 16, 2007
Instantaneous low flow			8.1	Dec 18	0.00	Jan 16, 1970
10 percent exceeds	163		115		165	
50 percent exceeds	55		56		60	
90 percent exceeds	22		20		21	



01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1962, 1964 to current year.

REMARKS.--Cooperative Network Site Descriptor: Urban Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 5.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determinations of dissolved ammonia, dissolved orthophosphate, suspended residue, ammonia-plus-organic nitrogen in bed sediment, and phosphorus in bed sediment were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 1 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Time	Turbdty white light, det ang 90+-30 corrctd	UV absorb- ance, 254 nm, wat flt units	UV absorb- ance, 280 nm, wat flt units	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units	Specif- ic conduc- tance, wat unf 25 degC (00095)	Temper- ature, air, deg C (00020)	Temper- ature, water, deg C (00010)	Hard- ness, water, mg/L as CaCO3 (00900)
		NTRU (63676)	/cm (50624)	/cm (61726)					μS/cm (00400)			
Nov												
27...	1000	69	10	.251	.202	760	9.1	79	7.6	346	10.0	7.5
Feb												
06...	0800	30	5.4	.128	.097	752	9.8	78	7.6	577	5.5	5.1
May												
01...	0930	62	2.1	.105	.078	769	8.2	77	7.6	547	13.0	12.8
Aug												
04...	0830	43	7.2	.120	.085	760	4.1	48	7.7	475	20.0	23.3
Nov												
27...												
Feb												
06...												
May												
01...												
Aug												
04...												

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 2 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Calcium water, filtrd, mg/L (00915)	Magnes- ium, water, filtrd, mg/L (00925)	Potas- sium, water, filtrd, mg/L (00935)	Sodium, water, filtrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chlor- ide, water, filtrd, mg/L (00940)	Fluor- ide, water, filtrd, mg/L (00950)	Silica, water, filtrd, mg/L as SiO2 (00955)	Sulfate water, filtrd, mg/L (00945)	Residue water, filtrd, sum of consti- tuents (70301)	Residue on evap. (70300)	Residue total at 180degC (00530)	Ammonia + org-N, water, filtrd, mg/L as N (00623)
Nov													
27...	31.2	5.69	2.42	27.5	76	49.3	<.12	4.6	13.2	181	193	6	.46
Feb													
06...	37.3	6.82	1.69	59.1	84	112	<.12	6.0	17.9	294	314	8	.40
May													
01...	36.6	6.51	1.62	58.9	84	105	E.06	2.1	13.7	E277	328	3	.48
Aug													
04...	32.7	6.17	1.71	47.0	83	88.6	<.12	6.5	9.75	244	272	8	.62

01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 3 of 3

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Ammonia water, filtrd, mg/L as N (00608)	Nitrate + nitrite water, mg/L as N (00631)	Particulate nitrogen, susp, water, mg/L (49570)	Total nitrogen, water, filtrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Ortho-phosphate, water, filtrd, mg/L as P (00671)	Phosphorus, water, filtrd, mg/L as P (00666)	Phosphorus, water, unfltrd, mg/L as P (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, filtrd, mg/L (00681)	Boron, water, filtrd, µg/L (01020)
Nov 27...	.050	.29	.21	.75	.96	.016	.025	.089	1.4	<.04	1.4	7.3	48
Feb 06...	.074	.72	.13	1.1	1.2	<.010	.017	.044	.9	M	.9	4.2	42
May 01...	.068	.33	.08	.81	.90	E.009	.014	.034	.6	<.04	.6	4.1	44
Aug 04...	.176	.42	.25	1.0	1.3	.010	.023	.101	1.4	<.04	1.4	5.0	46

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 1 of 4

[Remark codes: <, less than; E, estimated.]

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos-phorus, bed sedimnt total, mg/kg as P (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor-ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic bed sedimnt recover -able, ug/g (64847)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom-ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total digest, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)
Aug 04...	0730	7.45	240	E1,700	5.8	<.2	1.3	.080	25	2.7	8	6,500	87

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 2 of 4

[Remark codes: <, less than; E, estimated.]

Date	Mangan-ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen-iun, bed sedimnt recover -able, ug/g (64848)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di-methyl-naphth-alene, bed sed bed sed ug/kg (49403)	1,6-Di-methyl-naphth-alene, bed sed bed sed ug/kg (49404)	1Methyl-9H-fluor-ene, bed sed bed sed ug/kg (49398)	1-Methyl-phenan-threne, bed sed bed sed ug/kg (49410)	1-Methyl-pyrene, bed sed wsv nat ug/kg (49388)	236Tri-methyl-naphth-alene, bed sed bed sed ug/kg (49405)	2,6-Di-methyl-naphth-alene, bed sed bed sed ug/kg (49406)	2-Ethylnaphth-alene bed sed wsv nat ug/kg (49948)
Aug 04...	250	.009	5.3	<.1	22	E7	E14	E20	120	100	E12	E20	E7

01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 3 of 4

[Remark codes: <, less than; E, estimated.]

Date	2-Methyl-anthra-cene, bed sed <2 mm, bs ug/kg (49435)	4H-Cyclo-penta-fluor-ene, bed sed <2 mm, wsv nat ug/kg (49411)	9H-Fluor-naphth-ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, <2 mm ug/kg (49434)	Benzene, [a]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzene, [a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzene, [b]-fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49458)	Benzene, [b]-peryl-anthene, bed sed <2 mm, wsv nat ug/kg (49408)	Benzene, [k]-fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49397)	Benzene, [k]-sene, bed sed <2 mm, wsv nat ug/kg (49450)	Chrysene, bed sed <2 mm, wsv nat ug/kg (49461)	Dibenzanthracene, bed sed <2 mm, wsv nat ug/kg (49461)
Aug 04...	59	160	78	53	78	210	730	760	1,100	E400	450	870	<120	

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 4 of 4

[Remark codes: <, less than; E, estimated.]

Date	Fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sed <2 mm, bed sed bed sed field, <2 mm ug/kg (49390)	Iso-phorone, bed sed <2 mm, wsv nat ug/kg (49400)	Naphthalene, bed sed <2 mm, bed sed wsv nat field, <2 mm ug/kg (49402)	p-PCBs, bed sed <2 mm, bed wsv nat sedimnt ug/kg (39519)	Cresol, bed sed <2 mm, wsv nat field, <2 mm ug/kg (49451)	Phenanthrene, bed sed <2 mm, wsv nat field, <2 mm ug/kg (49409)	Phenanthrene, bed sed <2 mm, wsv nat field, <2 mm ug/kg (49393)	Phenanthrene, bed sed <2 mm, wsv nat field, <2 mm ug/kg (49387)	Pyrene, bed sed <2 mm, wsv nat field, <2 mm ug/kg (80164)	Bed sediment, dry svd sve dia percent percent <62.5um	
Aug 04...	1,700	E360	<50	E20	7.05	E7	980	E22	1,500	6		